



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

May 5, 2011

Mr. Michael J. Pacilio  
Senior Vice President, Exelon Generation Company, LLC  
President and Chief Nuclear Officer, Exelon Nuclear  
4300 Winfield Rd.  
Warrenville, IL 60555

SUBJECT: OYSTER CREEK NUCLEAR GENERATING STATION - NRC TRIENNIAL FIRE  
PROTECTION INSPECTION REPORT 05000219/2011007

Dear Mr. Pacilio:

On April 1, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed a triennial fire protection inspection at Oyster Creek Nuclear Generating Station. The enclosed inspection report documents the inspection results, which were discussed on April 1, 2011, with Mr. Michael Massaro, Site Vice President, and other members of your staff. A follow-up discussion to provide an update of the inspection findings was held with Mr. J. Chrisley by telephone on April 28, 2011.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. The inspectors also reviewed mitigation strategies for addressing large fires and explosions.

Based on the results of this inspection, one finding of very low safety significance (Green) was identified. This finding was also determined to be a violation of NRC requirements. However, because of the very low safety significance, and because the issue was entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest this NCV in this report, you should provide a written response within 30 days of the date of this inspection report with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Resident Inspector at Oyster Creek Nuclear Generating Station. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the Resident Inspector at Oyster Creek Nuclear Generating Station. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

In accordance with Title 10 of the Code of Federal Regulations Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARs) component of the NRC's document system Administrative Document and Access Management System (ADAMS). ADAMS is accessible from the NRC Web Site at <http://www.nrc.gov/reading-rm/adams.html> (The Public Electronic Reading Room).

Sincerely,

A handwritten signature in black ink, appearing to read "John F. Rogge". The signature is fluid and cursive, with a long horizontal stroke at the end.

John F. Rogge, Chief  
Engineering Branch 3  
Division of Reactor Safety

Docket No.: 50-219  
License No.: DPR-16

Enclosure: Inspection Report No. 05000219/2011007

cc w/encl: Distribution via ListServ

M. Pacilio

2

In accordance with Title 10 of the Code of Federal Regulations Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARs) component of the NRC's document system Administrative Document and Access Management System (ADAMS). ADAMS is accessible from the NRC Web Site at <http://www.nrc.gov/reading-rm/adams.html> (The Public Electronic Reading Room).

Sincerely,

/RA/

John F. Rogge, Chief  
Engineering Branch 3  
Division of Reactor Safety

Docket No.: 50-219  
License No.: DPR-16

Enclosure: Inspection Report No. 05000219/2011007

cc w/encl: Distribution via ListServ

Distribution w/encl:

W. Dean, RA  
D. Lew, DRA  
D. Roberts, DRP  
J. Clifford, DRP  
C. Miller, DRS  
P. Wilson, DRS  
R. Bellamy, DRP  
S. Barber, DRP  
C. Newport, DRP  
N. Lafferty, DRP

J. Kulp, DRP, SRI  
J. Ambrosini, DRP, RI  
B. Keighley, DRP, RI (Acting)  
J. DeVries, DRP, OA  
S. Bush-Goddard, RI OEDO  
D. Bearde, DRS  
RidsNrrPMOysterCreek Resource  
RidsNrrDorlLpl1-2 Resource  
ROPreports Resource

**SUNSI Review Complete: JFR (Reviewer's Initials) ADAMS ACCESSION NO. ML111250021**

**DOCUMENT NAME: G:\DRS\Engineering Branch 3\Scholl\Oyster Creek TFP Report 2011007.docx**

**After declaring this document "An Official Agency Record" it will be released to the Public.**

**To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy**

OFFICE	DRS	DRS	DRS	DRP			
NAME	LScholl/lis*	JFRogge/JFR	CCahill/cjc*	RBellamy/rrb*			
DATE	04/27/11	05/4/11	04/28/11	05/02/11			

\*see prior concurrence OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-219

License No.: DPR-16

Report No.: 05000219/2011007

Licensee: Exelon Generation Company, LLC

Facility: Oyster Creek Nuclear Generating Station

Location: Forked River, New Jersey

Dates: March 14, 2011 – April 1, 2011

Inspectors: L. Scholl, Senior Reactor Inspector, DRS (Team Leader)  
D. Orr, Senior Reactor Inspector, DRS  
J. Rady, Reactor Inspector, DRS  
C. Cahill, Senior Reactor Analyst, DRS

Approved by: John F. Rogge, Chief  
Engineering Branch 3  
Division of Reactor Safety

## SUMMARY OF FINDINGS

IR 05000219/2011007; 03/14/2011 – 04/01/2011; Exelon Generation Company, LLC; Oyster Creek Nuclear Generating Station; Triennial Fire Protection Team Inspection.

The report covered a two-week triennial fire protection team inspection by specialist inspectors. One finding of very low significance (Green) was identified. This finding was determined to be a non-cited violation (NCV). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" and the cross-cutting aspect was determined using IMC 0305, "Operating Reactor Assessment Program." Findings for which the significance determination process (SDP) does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### Cornerstone: Mitigating Systems

**Green:** The team identified an NCV of 10 CFR 50, Appendix R, III.G.2, in that Exelon failed to maintain the credited reactor coolant inventory makeup system free of fire damage in the event of a fire in the 'B' 480 volt (V) switchgear room. Specifically, Exelon failed to assure that the 'A' control rod drive (CRD) pump would remain available during 'B' 480V switchgear room fire scenarios. Cables associated with the 'A' CRD pump low pressure suction trip are located in the 'B' 480V switchgear room and are not protected by one of the methods specified in 10 CFR 50, Appendix R, Section III.G.2. Fire damage to these cables could result in the trip of the credited 'A' pump and render it inoperable from the control room. Exelon entered this issue into its corrective action program for long term resolution as Issue Report (IR) 01187591 and promptly established compensatory measures (an hourly fire watch) in the 'B' 480V switchgear room. Exelon also promptly performed an extent of condition review to ensure the 'B' CRD pump was not similarly affected for fire areas that credited its remote operation from the main control room.

This finding is more than minor because it is associated with the external factors attribute (fire) of the Mitigating Systems Cornerstone and adversely affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the availability of the credited 'A' CRD pump was not ensured for a 'B' 480V switchgear room fire scenario. A Senior Reactor Analyst performed a Phase 3 Fire Protection Significance Determination Process analysis and determined that this finding was of very low safety significance (Green). The Phase 3 SDP conservatively assumed the 'A' CRD pump failed for eight separate fire scenarios initiated by electrical ignition sources or transient combustibles. The results of the SDP were largely dominated by the availability of the feedwater and condensate system for reactor coolant inventory control because its circuits were not routed through the 'B' 480V switchgear room. This finding did not have a cross-cutting aspect because the performance deficiency occurred during development of the safe shutdown analysis in the 1980's and is not reflective of current licensee performance. (Section 1R05.06)

### Other Findings

None

## REPORT DETAILS

### Background

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05T, "Fire Protection." The objective of the inspection was to assess whether Exelon has implemented an adequate fire protection program and that post-fire safe shutdown capabilities have been established and are being properly maintained at the Oyster Creek Nuclear Generating Station (OCNGS). The following fire zones (FZs) were selected for detailed review based on risk insights from the Oyster Creek Individual Plant Examination (IPE)/Individual Plant Examination of External Events (IPEEE):

- OB-FZ-5 Control Room;
- OB-FZ-6B 'B' 480 Volt Switchgear Room;
- TB-FZ-11B Turbine Lube Oil Storage, Pumping & Purification Area; and
- TB-FZ-11C Switchgear Room – Turbine Building Mezzanine.

Inspection of these areas/zones fulfills the inspection procedure requirement to inspect a minimum of three samples.

The inspection team evaluated the licensee's fire protection program (FPP) against applicable requirements which included plant Technical Specifications, Operating License Condition 2.C.3, NRC Safety Evaluations, 10 CFR 50.48, 10 CFR 50, Appendix R, and Branch Technical Position (BTP) Chemical Engineering Branch (CMEB) 9.5-1. The team also reviewed related documents that included the Updated Final Safety Analysis Report (UFSAR), Section 9.5.1, the fire hazards analysis report (FHAR), and the post-fire safe shutdown analyses.

The team also evaluated two licensee mitigating strategies for addressing large fires and explosions as required by Operating License Condition 2.C.8. Inspection of these strategies fulfills the inspection procedure requirement to inspect a minimum of one sample.

Specific documents reviewed by the team are listed in the attachment.

### **1. REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### **1R05 Fire Protection (IP 71111.05T)**

##### **.01 Protection of Safe Shutdown Capabilities**

###### **a. Inspection Scope**

The team reviewed the FHAR, safe shutdown analyses and supporting drawings and documentation to verify that safe shutdown capabilities were properly protected.

Enclosure

The team ensured that applicable separation requirements of Section III.G of 10 CFR 50, Appendix R and the licensee's design and licensing bases were maintained for the credited safe shutdown equipment and their supporting power, control, and instrumentation cables. This review included an assessment of the adequacy of the selected systems for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and associated support system functions.

b. Findings

A finding was identified involving a safe shutdown analysis error that resulted in the failure to protect all cables associated with the credited CRD pump. Refer to Section 1R05.06 of this report.

.02 Passive Fire Protection

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe material conditions and the adequacy of design of fire area boundaries (including walls, ceilings, floors, fire doors, and fire dampers), electrical raceway fire barriers, and equipment fire barriers to ensure they were appropriate for the fire hazards in the area.

The team reviewed installation, repair, and qualification records for a sample of openings and penetration seals to ensure the fill material was of the appropriate fire rating and that the installation met the engineering design. The team reviewed similar records for the fire protection wraps to ensure the material was of an appropriate fire rating and that the installation met the engineering design. The team also reviewed completed surveillance and maintenance procedures for selected passive fire protection features to verify that maintenance and inspection activities are adequate.

b. Findings

No findings were identified.

.03 Active Fire Protection

a. Inspection Scope

The team reviewed the design, maintenance, testing, and operation of the fire detection and suppression systems in the selected plant fire areas. This included verification that the manual and automatic detection and suppression systems were installed, tested, and maintained in accordance with the National Fire Protection Association (NFPA) code of record and that each suppression system would control or extinguish fires associated with the hazards in the selected areas. A review of the design capabilities of the suppression agent delivery systems were verified to meet the code requirements for the

hazards involved. The team also performed a walkdown of accessible portions of the detection and suppression systems in the selected areas as well as a walk down of major system support equipment in other areas (e.g. fire pumps and carbon dioxide storage tanks and supply system) to assess the material condition and the operational lineup and availability of the systems and components. The team reviewed electric and diesel fire pump flow and pressure tests to ensure that the pumps were meeting their design requirements. The team also reviewed the fire main loop flow tests to ensure that the flow distribution circuits were able to meet the design requirements.

The team assessed the fire brigade capabilities by reviewing training, qualification, and drill critique records. The team also compared pre-fire plans for the selected fire areas with as-built plant conditions and fire response procedures to verify fire-fighting pre-fire plans are consistent with the fire protection features and potential fire conditions described in the FPP. In addition, the team inspected the fire brigade equipment (including smoke removal equipment) to determine operational readiness for fire fighting.

b. Findings

No findings were identified.

.04 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team performed document reviews and plant walkdowns to verify that redundant trains of systems required for hot shutdown, which are located in the same fire area, are not subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems. Specifically, the team verified that:

- A fire in one of the selected fire areas would not indirectly, through production of smoke, heat, or hot gases, cause activation of suppression systems that could potentially damage all redundant safe shutdown trains;
- A fire in one of the selected fire areas (or the inadvertent actuation or rupture of a fire suppression system) would not indirectly cause damage to all redundant trains (e.g. sprinkler caused flooding of other than the locally affected train); and,
- Adequate drainage is provided in areas protected by water suppression systems.

b. Findings

No findings were identified.



.05 Shutdown Capability – Normal and Alternative

a. Inspection Scope

The team reviewed the safe shutdown analysis, operating procedures, piping and instrumentation drawings (P&IDs), electrical drawings, the UFSAR, and other supporting documents for the selected fire areas to verify that the licensee had properly identified the systems and components necessary to achieve and maintain safe shutdown conditions.

The team assessed the adequacy of the selected systems and components for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and support system functions. This review included verification that alternative post-fire shutdown could be performed both with and without the availability of offsite power. Plant walkdowns were also performed to verify that the plant configuration was consistent with that described in the safe shutdown and fire hazards analyses. The team verified that the systems and components credited for use during shutdown would remain free from fire damage.

The team verified that the training program for licensed and non-licensed operators included alternative shutdown capability. The team also verified that personnel required for safe shutdown using the normal or alternative shutdown systems and procedures are trained and available onsite at all times, exclusive of those assigned as fire brigade members.

The team reviewed the adequacy of procedures utilized for post-fire shutdown and performed an independent walk through of procedure steps to ensure the implementation and human factors adequacy of the procedures. The team also verified that the operators could be reasonably expected to perform specific actions within the time required to maintain plant parameters within specified limits.

Specific procedures reviewed for normal and alternative post-fire shutdown included the following:

- ABN-1, Reactor Scram, Rev. 10;
- ABN-29, Plant Fires, Rev. 24;
- ABN-30, Control Room Evacuation, Rev. 16; and,
- 346, Operation of the Remote and Local Shutdown Panels, Rev. 17.

The team reviewed manual actions to ensure that they had been properly reviewed and approved and that the actions could be implemented in accordance with plant procedures in the time necessary to support the safe shutdown method for each fire area. The team also reviewed the periodic testing of the alternative shutdown transfer capability and instrumentation and control functions to ensure the tests are adequate to ensure the functionality of the alternative shutdown capability.

Enclosure

b. Findings

No findings were identified.

.06 Circuit Analysis

a. Inspection Scope

The team verified that the licensee performed a post-fire safe shutdown analysis for the selected fire areas and the analysis appropriately identified the structures, systems, and components important to achieving and maintaining safe shutdown. Additionally, the team verified that the licensee's analysis ensured that necessary electrical circuits were properly protected and that circuits that could adversely impact safe shutdown due to hot shorts, shorts to ground, or other failures were identified, evaluated, and dispositioned to ensure spurious actuations would not prevent safe shutdown.

The team's review considered fire and cable attributes, potential undesirable consequences, and common power supply/bus concerns. Specific items included the credibility of the fire threat, cable insulation attributes, cable failure modes, and actuations resulting in flow diversion or loss of coolant events.

The team also reviewed cable raceway drawings for a sample of components required for post-fire safe shutdown to verify that cables were routed as described in the cable routing matrices.

Cable failure modes were reviewed for the following components:

- Emergency Diesel Generator 2;
- Electromatic Relief Valves;
- 'A' Control Rod Drive Pump;
- 'B' Core Spray Pump; and,
- Reactor Vessel Wide Range Level Instrument LI-IA13.

The team reviewed circuit breaker coordination studies to ensure equipment needed to conduct post-fire safe shutdown activities would not be impacted due to a lack of coordination. Additionally, the team reviewed a sample of circuit breaker maintenance records to verify that circuit breakers for components required for post-fire safe shutdown were properly maintained in accordance with procedural requirements.

b. Findings

Control Cables for the Reactor Coolant Inventory Makeup Source Not Protected From Fire Damage

Introduction: The team identified a Green, non-cited violation (NCV) of 10 CFR 50, Appendix R, III.G.2, in that Exelon failed to maintain the safe shutdown credited reactor coolant inventory makeup system free of fire damage in the event of a fire in the

Enclosure

'B' 480 volt (V) switchgear room. Specifically, Exelon failed to assure that the control cables associated with the 'A' CRD pump low suction pressure trip circuitry were protected from the effects of a fire in this area. Without the required protection, fire damage to the cables could cause the pump to trip and could also prevent operators from starting the pump.

Description: The team requested several electrical schematics and wiring diagrams of instrumentation, control, and power circuits associated with components the licensee's analysis credited to be operable and free of fire damage for the selected inspection fire areas. While collecting the documents, Exelon engineers identified that a low pressure suction trip control circuit for the 'A' CRD pump was not included in the safe shutdown analysis. Exelon evaluated the affected circuitry and determined that two cables, that contained conductors used in the low suction pressure trip circuit, passed through the 'B' 480V switchgear room and were not protected from fire damage. Fire induced failures of either of these cables in the 'B' 480V switchgear room could spuriously trip the 'A' CRD pump and render it inoperable from the main control room. The NRC is treating this issue as a NRC-identified finding because, although Exelon engineers identified the safe shutdown analysis discrepancy, the discrepancy would not have been identified if the NRC inspectors did not select the 'A' CRD pump as an inspection sample.

10 CFR 50.48(b)(1) requires that all nuclear power plants licensed to operate prior to January 1, 1979, must satisfy the applicable requirements of 10 CFR Part 50, Appendix R, Section III.G. Appendix R, III.G.2, requires, in part, that where cables or equipment, including associated non-safety circuits that could prevent operation or cause maloperation due to hot shorts, open circuits, or shorts to ground, of redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located within the same fire area outside of primary containment, one of three means of protecting cables to ensure that one of the redundant trains is free of fire damage shall be provided. The three acceptable methods described in Appendix R, Section III.G.2 for maintaining one of the redundant trains in the same fire area free of fire damage are based on the use of physical barriers, spatial separation, and fire detection and an automatic fire suppression system. OCNCS FHAR Section 7.0, Rev. 15, stated that for a fire in the 'B' 480V switchgear room, hot shutdown will be achieved using isolation condenser 'A' for decay heat removal in conjunction with CRD pump 'A' for reactor coolant makeup. The failure to ensure the 'A' CRD pump low pressure suction trip circuitry was protected by one of the three acceptable methods described in Appendix R, Section III.G.2 was a performance deficiency.

Exelon entered this issue into its corrective action program for resolution as Issue Report (IR) 01187591 and established compensatory measures (an hourly fire watch in the 'B' 480V switchgear room). Exelon also promptly performed an extent of condition review and confirmed the 'B' CRD pump was not similarly affected for fire areas that credited its remote operation from the main control room. The team concluded that Exelon's interim compensatory measures were implemented in a timely manner and commensurate with the risk significance of the issue.

Analysis: Exelon's failure to ensure the 'A' CRD pump was available and not subject to a spurious trip on low suction pressure for a postulated 'B' 480V switchgear room fire

Enclosure

was a performance deficiency. This finding was more than minor because it is associated with the external factors attribute (fire) of the Mitigating Systems Cornerstone and adversely affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the availability of 'A' CRD pump was not ensured for a 'B' 480V switchgear room fire scenario.

The team evaluated this issue using Phase 1 of IMC 0609, Appendix F, Fire Protection Significance Determination Process (SDP), and determined that a Phase 2 or Phase 3 SDP evaluation would be required because a high degradation rating was assigned (due to the lack of any physical protection for the affected cables) and the fire area total fire frequency was relatively high (greater than  $1E-6$ ). A Senior Reactor Analyst (SRA) performed a Phase 3 SDP evaluation in which it was conservatively assumed the 'A' CRD pump failed for eight separate fire scenarios involving electrical equipment failures or transient combustibles. The results of the SDP were dominated by the availability of the condensate and feedwater systems for reactor coolant makeup when it was determined that circuits for these components were not routed through the 'B' 480V switchgear room. The team reviewed electrical circuits and cable routes with Exelon engineers to confirm that the condensate and feedwater systems could be appropriately credited during the Phase 3 evaluation. Based on the results of the Phase 3 SDP evaluation the team determined the issue was of very low safety significance (Green).

The team also determined that no cross-cutting aspects were associated with this finding. The performance deficiency occurred during initial development of the fire safe shutdown analysis in the 1980's and was not identified during a licensee project to update the fire safe shutdown analysis in the 1990's. Because the error occurred more than three years ago, the performance deficiency is not considered to be indicative of current licensee performance.

Enforcement. 10 CFR 50.48(b)(1) requires that all nuclear power plants licensed to operate prior to January 1, 1979, must satisfy the applicable requirements of 10 CFR Part 50, Appendix R, Section III.G. Appendix R, III.G.2, requires, in part, that where cables or equipment, including associated non-safety circuits that could prevent operation or cause maloperation due to hot shorts, open circuits, or shorts to ground, of redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located within the same fire area outside of primary containment, one of three means of protecting cables to ensure that one of the redundant trains is free of fire damage shall be provided. OCNCS FHAR Section 7.0, Rev. 15, stated that for a fire in the 'B' 480V switchgear room, hot shutdown will be achieved using isolation condenser 'A' for decay heat removal in conjunction with CRD pump 'A' for reactor coolant makeup. Contrary to the above, on March 15, 2011, the NRC identified that Exelon did not meet this requirement and had not historically met this requirement for the 'B' 480 V switchgear room fire area. Exelon failed to protect the 'A' CRD pump motor control circuits from a postulated fire-induced circuit failure resulting in the potential for pump trip due to a fire induced low pressure suction trip. Because this finding was of very low safety significance and was entered into Exelon's corrective action program (IR 01187591), this violation is being treated as an NCV, consistent with Section 2.3.2. of the NRC

Enclosure

Enforcement Policy. (NCV 5000219/2011007-001, Control Cables for the Reactor Coolant Inventory Makeup Source Not Protected From Fire Damage)

.07 Communications

a. Inspection Scope

The team reviewed safe shutdown procedures, the safe shutdown analysis, and associated documents to verify an adequate method of communications would be available to plant operators following a fire.

During this review the team considered the effects of ambient noise levels, clarity of reception, reliability, and coverage patterns. The team also inspected the designated emergency storage lockers to verify the availability of portable radios for the fire brigade and for plant operators. The team also verified that communications equipment such as repeaters and transmitters would not be affected by a fire.

b. Findings

No findings were identified.

.08 Emergency Lighting

a. Inspection Scope

The team observed the placement and coverage area of eight-hour emergency lights throughout the selected fire areas to evaluate their adequacy for illuminating access and egress pathways and any equipment requiring local operation or instrumentation monitoring for post-fire safe shutdown. The team also verified that the battery power supplies were rated for at least an eight-hour capacity. Preventive maintenance procedures, the vendor manual, completed surveillance tests, and battery replacement practices were also reviewed to verify that the emergency lighting was being maintained consistent with the manufacturer's recommendations and in a manner that would ensure reliable operation.

b. Findings

No findings were identified.

.09 Cold Shutdown Repairs

a. Inspection Scope

The team verified that the licensee had dedicated repair procedures, equipment, and materials to accomplish repairs of components required for cold shutdown which might be damaged by the fire to ensure cold shutdown could be achieved within the time frames specified in their design and licensing bases. The team verified that the repair

Enclosure

equipment, components, tools, and materials (e.g. pre-cut cables with prepared attachment lugs) were available and accessible on site.

b. Findings

No findings were identified.

.10 Compensatory Measures

a. Inspection Scope

The team verified that compensatory measures were in place for out-of-service, degraded or inoperable fire protection and post-fire safe shutdown equipment, systems, or features (e.g. detection and suppression systems and equipment, passive fire barriers, or pumps, valves or electrical devices providing safe shutdown functions or capabilities). The team also verified that the short term compensatory measures compensated for the degraded function or feature until appropriate corrective action could be taken and that the licensee was effective in returning the equipment to service in a reasonable period of time.

The team reviewed compensatory measures in the form of manual actions for 10 CFR Part 50 Appendix R, Section III.G.2 areas to verify that there is reasonable assurance that manual actions can be accomplished. Specific attributes reviewed include diagnostic instrumentation, environmental consideration, staffing, communications, equipment availability, training, procedures, and verification and validation.

b. Findings

No findings were identified.

.11 Fire Protection Program Changes

a. Inspection Scope

The team reviewed recent changes to the approved fire protection program to verify that the changes did not constitute an adverse effect on the ability to safely shutdown.

b. Findings

No findings were identified.

.12 Control of Transient Combustibles and Ignition Sources

a. Inspection Scope

The team reviewed the licensee's procedures and programs for the control of ignition sources and transient combustibles to assess their effectiveness in preventing fires and

Enclosure

in controlling combustible loading within limits established in the FHAR. A sample of hot work and transient combustible control permits were also reviewed. The team performed plant walkdowns to verify that transient combustibles and ignition sources were being implemented in accordance with the administrative controls.

b. Findings

No findings were identified.

.13 Large Fires and Explosions Mitigation Strategies

a. Inspection Scope

The team reviewed the licensee's preparedness to handle large fire or explosions by reviewing two mitigating strategies to verify they continue to meet operating license condition 2.C.17 by determining that:

- Procedures are being maintained and adequate;
- Equipment is properly staged and is being maintained and tested; and,
- Station personnel are knowledgeable and can implement the procedures.

b. Findings

One finding was identified and is documented in NRC Inspection Report 05000219/2011009.

**4. OTHER ACTIVITIES [OA]**

4OA2 Identification and Resolution of Problems

.01 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team verified that the licensee was identifying fire protection and post-fire safe shutdown issues at an appropriate threshold and entering them into the corrective action program. The team also reviewed a sample of selected issues to verify that the licensee had taken or planned appropriate corrective actions.

b. Findings

No findings were identified.

4OA6 Meetings, Including ExitExit Meeting Summary

The team presented their preliminary inspection results to Mr. Michael Massaro, Site Vice President, and other members of the site staff at an exit meeting on April 1, 2011. An updated status of the findings was provided to Mr. J. Chrisley by telephone on April 28, 2011. No proprietary information was included in this inspection report.

Enclosure



**ATTACHMENT**

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee Personnel

M. Carlson	Fire Protection Safe Shutdown Engineer
J. Chrisley	Regulatory Assurance Specialist
N. Onuorah	Fire Protection Safe Shutdown Engineer
C. Pragman	Exelon Corporate Fire Protection Manager
T. Prosser	Fire Marshall
M. Taylor	Exelon Corporate Fire Protection
T. Trettel	Fire Protection System Manager

NRC

J. Rogge	Chief, Engineering Branch 3, Division of Reactor Safety
J. Kulp	Senior Resident Inspector, Oyster Creek Nuclear Generating Station
J. Ambrosini	Resident Inspector, Oyster Creek Nuclear Generating Station
B. Keighley	Resident Inspector, Acting, Oyster Creek Nuclear Generating Station

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

**OPEN/CLOSED**

05000219/201107-01	NCV	Control Cables for the Reactor Coolant Inventory Makeup Source Not Protected From Fire Damage (Section 1R05.06)
--------------------	-----	---

## LIST OF DOCUMENTS REVIEWED

### Fire Protection Licensing Documents

990-1746, OCNGS Fire Hazards Analysis Report, Rev. 15  
License No. DPR-16, Exelon Generation Company, Docket No. 50-219, OCNGS Amendment to  
Renewal Facility Operating License, Amendment No. 277  
SP-1302-06-013, Augmented Quality Fire Protection Specification for Post-Fire Safe Shutdown  
Program Requirements at OCNGS, Rev. 4  
UFSAR, Chapter 9, OCNGS Updated Final Safety Analysis Report, Rev. 14

### Design Changes

SDD OC-642 A, Appendix R Modifications to Electromatic Relief Valves, Rev. 5

### Calculations/Engineering Evaluation Reports

08-00553, Fire Sprinklers System Expansion, A/B 4160V and C Battery Rooms, Rev. 1  
98-E04, Upgrade of Raceways 62-158 and 62-161, 12-602 and 12-603, 12-600 and 12-601,  
dated 3/5/98  
A2014648, Evaluate Penetrations on Sheetrock Wall Between OB-FZ-6A and 6B, Rev. 0  
A2014648-6, Attachment A, Technical Evaluation of a One-Hour Rated Penetration Seal  
Installed in a Gypsum Stud Partition, Rev. 0  
BM-TE-14, Mecatiss Systems MTS-1 and MPF-60 Interfacing with Partially Covered Silicone  
Foam Penetration Seal, dated 11/29/00  
C-1302-700-5350-003, OC-4160V Class 1E Protective Device Relay Setpoints, Rev. 5  
C-1302-811-E310-036, 4160V Room Fire Protection Preaction Sprinkler System Hydraulic  
Calculation, Rev. 1  
C-1302-813-E120-001, Halon 1301 Fire Protection Systems for Main Control Room Systems A,  
B, C, and A/B Battery Room System, Rev. 0  
C-1302-911-E120-001, Fire Area/Zones OB-FA-5 – Fire Safe Shutdown Analysis, Rev. 0G2  
C-1302-911-E120-007, Fire Area/Zones OB-FZ-6B – Fire Safe Shutdown Analysis, Rev. 0G3  
C-1302-911-E120-008, Fire Area/Zones TB-FZ-11C & TB-FA-26 – Fire Safe Shutdown  
Analysis, Rev. 0G3  
C-1302-911-E120-018, Fire Area/Zones TB-FZ-11B – Fire Safe Shutdown Analysis, Rev. 0G3  
ETR-P1787-001, Appendix R Evaluation of Protective Device Coordination, Rev. 0  
OC PSA-012, Internal Flood Evaluation Summary and Notebook, Rev. 1  
OC-SDP-2011-01, Oyster Creek SDP Evaluation for CRD Pump 'A' Unavailable during 480V  
Switchgear Room 'B' Fire, Rev. 0  
Report 3731-021, Study for Appendix R – Spurious Actuation of Electromatic Relief Valves,  
Rev. 1  
Report 3731-042, Study for Appendix R - Evaluation of Tripping Feedwater Pumps From The  
Control Room in the Event of a Fire Outside of the Control Room Complex, Rev. 1  
SP-1302-06-13, Post-Fire Safe Shutdown Requirements at OCNGS, Rev. 4

Procedures

101.2, Oyster Creek Site Fire Protection Program, Rev. 67  
2400-APR-3228.01, Appendix R – Temporary Torus Water Level Instrument, Rev.8  
2400-APR-3900.01, Appendix R Repair Kit Annual Inspection, Rev. 18  
305, Shutdown Cooling System Operation, Rev. 105  
307, Isolation Condenser System, Rev. 112  
320.1, Demineralized Water Transfer System, Rev. 58  
333, Plant Fire Protection System, Rev. 104  
346, Operation of the Remote and Local Shutdown Panels, Rev. 17  
ABN-29, Plant Fires, Rev. 24  
ABN-3, Loss of Shutdown Cooling, Rev. 3  
ABN-30, Control Room Evacuation, Revs. 15 and 16  
ABN-40, Stuck Open EMRV, Rev. 7  
CC-AA-211, Fire Protection Program, Rev. 4  
EMG-3200.01A, EOP Flowchart RPV Control - No ATWS, Rev. 6  
MA-AA-716-040, Control of Portable Measurement and Test Equipment Program, Rev. 7

Completed Tests/Surveillances

645.4.012, Fire Pump Functional Test, Rev. 6, Completed 2/6/09  
645.4.012, Fire Pump Functional Test, Rev. 9, Completed 11/7/09  
645.6.010, Fire Suppression Deluge Valve Functional Test, Rev. 32, Completed 1/7/09  
645.6.010, Fire Suppression Deluge Valve Functional Test, Rev. 34, Completed 2/19/10,  
4/13/10, and 6/21/10  
645.6.013, Fire Suppression System Halon Functional Test, Rev. 29, Completed 2/2/09  
645.6.013, Fire Suppression System Halon Functional Test, Rev. 30, Completed 7/21/09 and  
4/27/10  
645.6.014, Fire Suppression System Halon Cylinder Check, Rev. 20, Completed 6/23/09,  
12/11/09, and 7/30/10  
645.6.017, Fire Barrier Penetration Surveillance, Rev. 10, Completed 6/26/07, 6/24/09, and  
7/23/07  
645.6.017, Fire Barrier Penetration Surveillance, Rev. 12, Completed 7/23/07  
645.6.017, Fire Barrier Penetration Surveillance, Rev. 14, Completed 6/29/09  
645.6.017, Fire Barrier Penetration Surveillance, Rev. 15, Completed 8/3/10 and 10/11/10  
645.6.023, Fire Suppression Water System Underground Flow Test, Rev. 11, Completed  
12/12/06  
645.6.023, Fire Suppression Water System Underground Flow Test, Rev. 14, Completed  
4/15/10  
645.6.026, Fire Damper Inspection, Rev. 11, Completed 6/27/06 and 6/13/08  
645.6.028, Thermo-Lag and Mecatiss Envelope System Fire Barriers, Rev. 8, Completed  
2/16/07  
645.6.028, Thermo-Lag and Mecatiss Envelope System Fire Barriers, Rev. 10, Completed  
12/16/09  
645.6.032, Fire Detection System Alarm Circuitry Test for Turbine Building and 4160V  
Switchgear Room, Rev. 17, Completed 11/30/07, 12/12/08, and 5/29/09  
645.6.032, Fire Detection System Alarm Circuitry Test for Turbine Building and 4160V  
Switchgear Room, Rev. 19, Completed 4/7/10

#### A-4

645.6.033, Fire Detection System Alarm Circuitry Test for Control Room and Upper and Lower Cable Spreading Room, Rev. 14, Completed 6/10/09 and 6/14/10  
645.6.034, Fire Detection System Alarm Circuitry Test for 480V Switchgear Rooms, A/B Battery Rooms, and MG Set Room, Rev. 12, Completed 6/19/09 and 7/30/10  
TP 400/0.1, Control Room Emergency Lighting Test, Rev. 0, Completed 10/26/84  
TP 447/5, 480V Switchgear Room Halon System Functional Test, Rev. 0, Completed 12/4/86  
TP 461/2, Appendix R Emergency Lighting Test, Rev. 0, Completed 2/28/89

#### Quality Assurance Audits and Self Assessments

Fire Protection Self-Assessment Report, Dated 1/21/2011

#### System Health Reports

Fire Barriers, 3<sup>rd</sup> and 4<sup>th</sup> Qtr. 2010  
Fire Detection Systems, 3<sup>rd</sup> and 4<sup>th</sup> Qtr. 2010  
Fire Protection Halon System, 3<sup>rd</sup> and 4<sup>th</sup> Qtr. 2010  
Fire Protection Water System, 3<sup>rd</sup> and 4<sup>th</sup> Qtr. 2010

#### Drawings and Wiring Diagrams

0370-031-005, Relay Panel ER 18B Connection Diagram, Rev. 5  
103D4623, Sheet 1, AKD-5 Powermaster Switchgear Connection Diagram, Rev. 21  
103D4625, Connection Diagram AKD-5 Powermaster Switchgear, Rev. 21  
3102, Turbine Building Tray Plan Basement, Rev. 6  
3118, Turbine Building Lighting Plan Operating Floor, Rev. 5  
3159, Office Building Conduit & Tray Plan – 1<sup>st</sup> Floor, Rev. 25  
3179, Miscellaneous Outdoor Facilities, Rev. 9  
3180, Sheet 1, Miscellaneous Outdoor Facilities, Rev. 12  
3E-611-17-004, Sheet 1, Elec. Elem. Diagram Control Panel 1F/2F-Annun. B, Rev. 13  
7023-56752-43, Sheet 1, Connection Diagram Local Shutdown Panel LSP-1A2, Rev. 7  
7023-56754-43, Sheets 1 & 2, Wiring Diagram Local Shutdown Panel LSP-DG2, Revs. 8 and 6  
BR 3000, Electrical Power System Key One Line Diagram, Rev. 13  
BR 3001, Plant Electrical Generation Main One Line Diagram, Sheet 1, Rev. 15  
BR 3001, Emergency Power System One Line Diagram – Emergency Diesel Generators, Sheet 2, Rev. 4  
BR 3001A, 4160V System One Line Diagram, 4160V SWGR Bus 1A, Rev. 11  
BR 3001C, 4160V System One Line Diagram, 4160V Emergency SWGR Bus 1C & 1D, Rev. 1  
BR 3002, 480V System One Line Diagram, 460V Unit Substation 1A1 & 1B1, Sheet 4, Rev. 13  
BR 3002, 480V System One Line Diagram, 460V Unit Substation 1A2 & 1B2, Sheet 2, Rev. 11  
BR 3002, 480V System One Line Diagram, 460V Unit Substation 1A3 & 1B3, Sheet 3, Rev. 9  
BR 3004, Reactor Building 460V MCC One Line Diagram, 1A21 & 1A21A, Sheet 1, Rev. 17  
BR 3004, Reactor Building 460V MCC One Line Diagram, 1A21B & 1A23, Sheet 2, Rev. 14  
BR 3004, Reactor Building 460V MCC One Line Diagram, 1B21 & 1B21A, Sheet 3, Rev. 16  
BR 3004, Reactor Building 460V MCC One Line Diagram, 1B21B & 1B23, Sheet 4, Rev. 18  
BR 3005, Misc. Building 460V MCC One Line Diagram, Sheet 2, Rev. 9  
BR 3005, Misc. Building 460V MCC One Line Diagram, Sheet 3, Rev. 14  
BR 3005, Misc. Building 460V MCC One Line Diagram, Sheet 4, Rev. 5

Attachment

BR 3005, Misc. Building 460V MCC One Line Diagram, Sheet 5, Rev. 13  
 BR 3013, AC Vital Power System One Line Diagram, Vital MCC 1A2 & 1B2, Sheet 1, Rev. 13  
 BR 3013, AC Vital Power System One Line Diagram, Vital MCC 1AB2, 1A2 & 1B2, Sheet 2,  
 BR 3028, 125V Station DC System One Line Diagram, 125V DC Distribution Center A & B,  
 MCC DC-1, Sheet 1, Rev. 17  
 BR 3038, Sheet 1N, Control Rod Drive System Electrical Elementary Diagram CRD Feed  
 Pumps P-15-001A and P-15-001B Control Interlock, Rev. 25  
 BR 3138, Reactor Building Conduit Plan El. 51-3", Rev. 20  
 DJP 3E-811-22-2001, Sheets 1 and 2, Fire Sprinkler System Expansion 4160V Switchgear  
 Room and Fire Protection Hose Stations, Rev. 0  
 DJP FBS OB-FZ-6B-01, Sheet 1, Isometric Fire Barrier (Mecatiss) B 480V Switchgear Room,  
 Rev. 0  
 DJP FBS OB-FZ-6B-02, Sheet 1, Isometric Fire Barrier (Mecatiss) B 480V Switchgear Room,  
 Rev. 0  
 DJP FBS OB-FZ-6B-03, Sheet 1, Isometric Fire Barrier (Mecatiss) B 480V Switchgear Room,  
 Rev. 0  
 DJP FBS OB-FZ-6B-04, Sheet 1, Isometric Fire Barrier (Mecatiss) B 480V Switchgear Room,  
 Rev. 0  
 DJP FBS OB-FZ-6B-05, Sheet 1, Isometric Fire Barrier (Mecatiss) B 480V Switchgear Room,  
 Rev. 0  
 E1132, Elementary Diagram 1A2-U033C CRD Feed Pump NC08A, Rev. 15  
 EB D-3033, 125V Station DC System One Line Diagram, 125V DC Distribution Center C  
 and MCC DC-2, Rev. 31  
 EM 839790, Sheets 1 – 8, and 11 Emergency Diesel Generator #2 Electrical Elementary Wiring  
 Diagram, Revs. 24, 29, 12, 8, 2, 4, 5, 4, and 2  
 GE 103D5287, Sheets 2 and 3, Metalclad Switchgear Interconnection Diagram, Revs. 25 and  
 29  
 GE 112C2247, Sheet 9, Main Control Room Panels Electrical Connection Diagram Panel 4F,  
 Rev. 32  
 GE 112C2650, Sheet 4, Main Control Room Panel Electrical Connection Diagram Panel 5F/6F,  
 Rev. 24  
 GE 112C2808, Sheet 3, Reactor Plant Instrumentation Electrical Connection Diagram  
 Instrumentation Rack RK01, Reactor Prot 1A, 2A & NSSS, Rev. 13  
 GE 112C3701, Sheets 2, 3 & 4, Electrical Connection Diagram Panel 10R, Revs. 19, 22 and 14  
 GE 148F712, Sheet 1, Reactor Vessel Level/Pressure/Temperature Instruments, Rev. 47  
 GE 148F912, Sheets 1 and 3, Reactor Plant Instrm Electrical Elementary Diagram, Rev. 7  
 and 17  
 GE 223R0173, Sheets 21 and 24, Core Spray System Electrical Elementary Diagram,  
 Rev. 26 and 24  
 GE 719E211, Sheets 6, 9 and 10, Main Control Room Panel Electrical Connection Diagram  
 Panel 1F/2F, Rev. 10, 4 and 6  
 GE 719E251, Sheet 1, Panel ER18A, Rev. 29  
 GE 719E252, Sheet 1, Panel ER18B, Rev. 27  
 GE 729E182, Sheets 1 - 5, Auto Depressurization Sys Electrical Elementary Diagram, Revs. 33,  
 19, 19, 2, and 2  
 GU 3C-733-11-006, 120 AC Vital Power System Panel Schedule Instrument Panel 4, Rev. 5  
 JC 19479, Sheet 1, Fire Protection Water System Flow Diagram, Rev. 38  
 JC 19479, Sheet 3, Fire Protection Water System Flow Diagram, Rev. 68

JC 19629, Sheet 1, Fire Protection Carbon Dioxide Flow Diagram, Rev. 8  
 JC 19629, Sheet 2, Fire Protection Halon Flow Diagram, Rev. 8  
 NU 5060E6003, Sheets 2 and 4, Core Spray/RBCCW Drywell Isolation, Revs. 25 and 15  
 SK 13432-42-APPR, Sheet 13, Location of Shutdown Ckts Appendix R Report 1<sup>st</sup> and 2<sup>nd</sup> Flr  
 Office Building, Rev. 2  
 SK 13432-42-APPR, Sheet 15, Tray Identification Appendix R Report 1<sup>st</sup> & 2<sup>nd</sup> Floor Office  
 Building, Rev. 0  
 SK 13432-42-APPR, Sheet 16, Tray Identification Appendix R Report 3<sup>rd</sup> Floor Office Building,  
 Rev. 0  
 SK 13432-42-APPR, Sheet 19., Tray Identification Appendix R Report Reactor Building E. 51'-  
 3", Rev. 0  
 SK 13432-42-APPR, Sheet 22, Tray Identification Appendix R Report Turbine Building  
 Basement, Rev. 0  
 SK 13432-42-APPR, Sheet 23, Tray Identification Appendix R Report Turbine Building  
 Mezzanine, Rev. 0  
 SK 13432-42-APPR, Sheet 7, Location of Shutdown Ckts Appendix R Report Turbine Building  
 Basement, Rev. 1  
 SK 13432-42-APPR, Sheet 8, Location of Shutdown Ckts Appendix R Report Turbine Building  
 Mezzanine, Rev. 1  
 SN 13432-44-EE-03, Sheet 3, Connection and Wiring Diagram Analog, Rev. 10  
 SN 15050-611-EE-238, Emergency Diesel Generators Connection Diagram Panel 8F/9F,  
 Rev. 8  
 T3113, Turbine Building Conduit & Tray – Sections & Details, Rev. 4

#### Piping and Instrumentation Diagrams

3E-243-21-1000, Drywell and Torus Vacuum Relief System, Rev. 28  
 BR 2002, Main Steam System, Sheet 1, Rev. 61  
 BR 2002, Main Steam System, Sheet 2, Rev. 67  
 BR 2003, Condensate/Feed System, Rev. 92  
 BR 2004, Condensate Transfer System, Sheet 2, Rev. 94  
 BR 2005, Emergency Service Water System, Sheet 4, Rev. 82  
 BR 2006, Reactor Building Closed Cooling Water System, Sheet 1, Rev. 73  
 BR 2006, Reactor Building Closed Cooling Water System, Sheet 2, Rev. 44  
 BR 2006, Reactor Building Closed Cooling Water System, Sheet 3, Rev. 56  
 BR 2010, Office Building HVAC – 480V Switchgear Room, Sheet 3, Rev. 23  
 GE 148F262, Emergency Condenser System, Rev. 53  
 GE 148F444, Clean-Up Demineralizer System, Rev. 97  
 GE 148F711, Shutdown Cooling System, Rev. 43  
 GE 148F740, Containment Spray System, Rev. 43  
 GE 237E487, Control Rod Drive System, Rev. 68  
 GE 237E798, Recirculation System, Rev. 33  
 GE 885D781, Core Spray System, Rev. 71  
 GU 3E-243-21-1000, Drywell and Torus Vacuum Relief System, Rev. 28  
 M0320, Flow Diagram Office Building 480V Switchgear Room Ventilation, Rev. 4

Pre-Fire Plans

OP-OC-201-008, OCGS Pre-Fire Plans, Rev. 12  
OP-OC-201-008-1018, OCGS Pre-Fire Plan for OB-FZ-5, Rev. 1  
OP-OC-201-008-1023, OCGS Pre-Fire Plan for OB-FZ-6B, Rev. 1  
OP-OC-201-008-1024, OCGS Pre-Fire Plan for TB-FZ-11C, TB-FA-26, Rev. 1  
OP-OC-201-008-1031, OCGS Pre-Fire Plan for TB-FZ-11B, Rev. 2

Fire Brigade Documents

Fire System Impairment Log, Dated 3/14/11  
OP-AA-201-001, Fire Marshall Tours, Rev. 5  
OP-AA-201-002, Fire Reports, Rev. 4  
OP-AA-201-003, Fire Drill Performance, Rev. 12  
OP-AA-201-004, Fire Prevention for Hot Work, Rev. 8  
OP-AA-201-005, Fire Brigade Qualification, Rev. 7  
OP-AA-201-006, Control of Temporary Heat Sources, Rev. 5  
OP-AA-201-007, Fire Protection System Impairment Control, Rev. 6  
OP-AA-201-008, Pre-Fire Plan Manual, Rev. 3  
OP-AA-201-009, Control of Transient Combustible Material, Rev. 11

Fire Brigade Drills, Critiques and Training

Fire Drill Records and Critiques, Completed 9/29/10, 1/20/11, 2/20/11, 1/15/11, 1/21/11,  
2/16/11, and 3/12/11  
Learning Management System, Electronic Training Records

Operator Safe Shutdown Training

2621.882.0.0029, Initial License Training Simulator Exercise Guide – Plant Fire, Rev. 3  
2621.882.0.0030A, Initial License Training Simulator Exercise Guide – Control Room  
Evacuation, Rev. 3  
2621.885.0.0023A, Licensed Operator Requalification Training Simulator Exercise Guide –  
Appendix R Secario 1, Fire in 480V Switchgear Room, Rev. 3  
2621.885.0.0023E, Licensed Operator Requalification Training Simulator Exercise Guide –  
Station Fire in 4160V SWGR RM, Rev. 1

Hot Work and Ignition Source Permits

C2019912  
C2025283  
M2212606  
R2111054  
R2173801

Transient Combustible Evaluations

11-02, Transient Combustible Permit, 3/7/11  
 11-03, Transient Combustible Permit, 3/11/11  
 11-05, Transient Combustible Permit, 3/31/11  
 11-06, Transient Combustible Permit, 3/18/11  
 11-07, Transient Combustible Permit, 4/10/11

Miscellaneous Documents

990-6054, Underwriters Laboratories Report, Test Deck 1, Dated 2/5/96  
 990-6056, Underwriters Laboratories Report Test Deck 3, Dated 2/7/96  
 990-6058, Underwriters Laboratories Report Test Deck 5, Dated 2/9/96  
 990-1704, Chemetron Fire Systems Halon 1301 Discharge Test, Dated 11/17/86  
 EPRI TR-106826, Battery Performance Monitoring By Internal Ohmic Measurement, Emergency Lighting Unit Batteries, Dated 12/96  
 20030117-01, OCNGS Safe Shutdown Component and Cable Data Sheets, Rev. 0  
 20021203-06, OCNGS Safe Shutdown Cable Location Sheets, Rev. 0  
 Pull/Termination Sheet Cable 24-68  
 Pull/Termination Sheet Cable 62-170  
 Pull/Termination Sheet Cable 71-109  
 Pull/Termination Sheet Cable 82-197  
 Pull/Termination Sheet Cable 11-332  
 Pull/Termination Sheet Cable 11-535

Issue Reports

0591366	0877581	1088269	1182462*	1193360*
0644539	1058913	1090223	1182707*	1194171*
0783645	1058926	1094393	1185944*	1194591*
0785820	1058977	1094989	1187591*	1194613*
0807091	1059050	1138695	1187591*	1195389*
0815222	1059361	1158930	1187849*	842102
0819836	1059395	1159026	1187856*	842131
0822104	1059395	1159444	1187909*	888469
0838216	1059450	1161093	1188117	910687
0843932	1059636	1171672	1188318*	935317
0847756	1060754	1182345*	1188816*	977549
0857436	1062612	1182450*	1189197*	978274

\* NRC identified during this inspection.



Work Orders

R0804233	R2099815	R2130450	R2150592	R2170362
R0804234	R2105776	R2131656	R2150594	R2170758
R2033837	R2106913	R2132324	R2150602	R2171458
R2069963	R2110802	R2132811	R2156009	R2172589
R2073167	R2112744	R2133519	R2156010	R2172590
R2073169	R2114375	R2134391	R2156012	
R2073286	R2116503	R2135731	R2159857	
R2088573	R2120040	R2137980	R2160534	
R2093925	R2120833	R2139017	R2161593	
R2095793	R2125725	R2139133	R2165178	
R2096505	R2125839	R2142611	R2165310	
R2096959	R2126149	R2145689	R2166763	
R2097766	R2127854	R2147110	R2168295	
R2097766	R2130173	R2147838	R2169424	

**LIST OF ACRONYMS**

ADAMS	Agencywide Documents Access and Management System
BTP	Branch Technical Position
CFR	Code of Federal Regulations
CMEB	Chemical Engineering Branch
CRD	Control Rod Drive
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
FA	Fire Area
FHAR	Fire Hazards Analysis Report
FPP	Fire Protection Program
FZ	Fire Zone
IP	Inspection Procedure
IPE	Individual Plant Examination
IPEEE	Individual Plant Examination of External Events
IR	Issue Report
NCV	Non-Cited Violation
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
OCNGS	Oyster Creek Nuclear Generating Station
P&ID	Piping and Instrumentation Drawing
PARs	Publicly Available Records
SDP	Significance Determination Process
SE	Safety Evaluation
SER	Safety Evaluation Report
SRA	Senior Risk Analyst
SRI	Senior Resident Inspector
SUNSI	Sensitive Unclassified Non-Safeguards Information
UFSAR	Updated Final Safety Analysis Report
V	Volt